

Oral Cancer

BACKGROUND

Note: All information and data below refers to oral cancer as both the oral cavity (mouth) and the pharynx (throat) unless otherwise listed as individual areas.

Facts about oral cancer

- In the US, oral cancer is the 6th most common cancer in males and the 14th most common cancer in females.
- Each year in the US, more than 30,000 people are newly diagnosed with oral cancer.
- Oral cancer strikes men twice as often as women.
- Oral cancer in its early stage can be painless and go unnoticed.
- When found early, individuals with oral cancers have an 80 to 90% 5-year survival rate.
- Unfortunately, most oral cancers are diagnosed in their late stages, decreasing the five-year survival rate to 50%, and about 35% for African American males.
- This cancer usually occurs in people over 45, but may develop at any age.
- The risk of developing oral cancer significantly increases with the use of tobacco products or alcohol use. Tobacco use combined with alcohol use significantly increases the risk for oral cancer.

What is oral cancer?

- Oral cancer refers to cancers that develop in the oral cavity (mouth) and pharynx (throat).
- This cancer can be found in the mouth (oral cavity). The mouth includes the lips, the inside lining of the lips and cheeks (buccal mucosa), the teeth, the gums, the front two-thirds of the tongue, the floor of the mouth below the tongue, the bony roof of the mouth (hard palate), and the area behind the wisdom teeth (retromolar trigone).
- The cancer found in the pharynx develops in the part of the throat just behind the mouth (oropharynx), which includes the base of tongue (the back third of the tongue), the soft palate, the tonsils and tonsillar pillars (the front and back of the tonsils), and the back wall of the throat (the posterior pharyngeal wall).
- The oral cavity and pharynx assist with breathing, talking, eating, chewing, and swallowing.
- These areas contain several types of tissue and each of these tissues contains several types of cells. Each type of cell can develop into cancer.

What are the signs and symptoms of oral cancer?

Symptoms of oral cancer include:

- A mouth sore that fails to heal or that bleeds easily.
- A pain in the mouth that doesn't go away.
- A white or red patch in the mouth that will not go away.
- A lump, thickening or soreness in the mouth, throat or tongue.
- A sore throat or a feeling that something is caught in the throat that doesn't go away.

- Difficulty chewing, swallowing food, or moving the jaw or tongue.
- Numbness of the tongue or other area of the mouth.
- Swelling of the jaw that causes dentures to fit poorly or become uncomfortable.
- Loosening of the teeth or pain around the teeth or jaw.
- Voice changes.
- A lump or mass in the neck.

Less common warning signs include:

- Persistent bad breath.
- Weight loss.

Talk with your health care professional about any questions you may have.

What are the risk factors for oral cancer?

Risk factors of oral cancer include:

- Tobacco use (including cigarettes, pipes, cigars, chewing tobacco and snuff).
- Heavy alcohol use.
- Age (In Massachusetts, new cases of oral cancer begin to increase in the 45 to 64 year age group, and are highest in the 75 to 84 year age group.)
- Poor nutrition, especially chronic iron deficiency.

Possible risk factors:

- Chronic irritation of the mouth due to ill-fitting dentures or broken teeth.
- Poor oral hygiene.

PREVENTION AND SCREENING

Note: All information and data below refers to oral cancer as both the oral cavity (mouth) and the pharynx (throat) unless otherwise listed as individual areas.

How can I reduce my risk of developing oral cancer?

- Do not smoke or chew tobacco products.
- Limit your intake of alcoholic beverages, if you drink at all.
- Reduce exposure to ultraviolet rays by wearing a wide-brimmed hat and using sunscreen to avoid cancer on the lips.
- Avoid sources of oral irritation (such as dentures that do not fit properly).
- Eat at least 5 servings of fruits and vegetables every day, as well as servings of whole grain foods from plant sources such as breads, cereals, grain products, rice, pasta, or beans.

Screening for oral cancer

Oral screenings (including an internal examination of the lips, tongue, inside lining of the cheeks, the floor of the mouth, gums and the hard palate and an external examination of the face and neck should be done) annually. Oral screenings may be conducted by all primary care providers, including physicians, nurse practitioners, and nurses. Dentists

and dental hygienists should conduct an oral cancer screening on an annual basis as part of a regular dental visit.

DIAGNOSIS AND TREATMENT

Note: All information and data below refers to oral cancer as both the oral cavity (mouth) and the pharynx (throat) unless otherwise listed as individual areas.

This site provides general information that may apply to your specific situation. You may visit the National Cancer Institute's web site www.cancer.gov for the most current cancer information and clinical trials. Once there, you will be able to select from a full range of cancer topics. If you want to speak with a cancer information expert confidentially, you may call 1-800-4CANCER (1-800-422-6237) between 9:00 AM - 4:30 PM.

It is always best to discuss your personal risk for cancer as well as your screening, diagnosis and treatment needs with your health care provider before you commit to a course of action.

How is oral cancer diagnosed?

The first step in any medical evaluation is to gather information about symptoms, risk factors, and other medical conditions. Your health care professional will do a complete physical examination and look for any signs of oral or throat cancer.

If there is a reason to think you might have oral cancer, your health care provider will refer you to an oral and maxillofacial surgeon and/or a head and neck surgeon (otolaryngologist) for a complete evaluation.

A complete head and neck exam is done, but because the pharynx is deep inside the neck and sometimes not easily seen, special fiber-optic scopes (flexible, lighted, narrow tubes inserted through the mouth or nose) and mirrors are used to examine these areas.

- Indirect pharyngoscopy and laryngoscopy is the use of small mirrors to look at the pharynx, base of tongue, and larynx.
- Direct laryngoscopy is done with fiber-optic scopes.

A sample of tissue or cells is always needed to confirm that cancer is really present before treatment is started. Several types of samples are used, depending on the patient's individual case.

- Exfoliative cytology: The health care provider scrapes a suspicious lesion and smears the tissue he/she collects onto a slide. The sample is then stained with a dye so the cells can be seen under the microscope. If any of the cells look abnormal, then a biopsy can be done.
- Incisional biopsy: This can be done either in the health care provider's office or in the operating room. Where the biopsy is performed depends on the location of the tumor and how easy it is to get a good tissue sample.

- Fine-needle aspiration (FNA) biopsy: If a patient has a neck mass (or lump) that can be felt, a thin needle may be placed into the mass so cells can be withdrawn to be checked under the microscope. FNA biopsy can be used in several different situations.

Once the oral or throat cancer has been diagnosed then other types of tests will be given to determine if the cancer has spread. The tests could be chest x-ray, CT (computed tomography) scan, MRI (magnetic resonance imaging), PET (positron emission tomography) scan, or barium swallow.

How is oral cancer treated?

Operations-there are several that are commonly used to treat oral cavity and throat cancers. Depending on the exact location and stage of the cancer, one or more of these may be used to remove the cancer, and to help restore the appearance and function of the tissues affected by the cancer or its treatment.

- Primary tumor resection: If the tumor can be easily moved in the mouth by the doctor feeling the tumor, the tumor will be removed with surrounding normal tissue to determine if the entire tumor has been removed.
- Full or partial mandible resection: If the tumor seems to be attached to the jaw bone then the tumor will be surgically removed with either a piece of the jaw bone or a section of the jaw bone.
- Maxillectomy: If the tumor is on the roof of the mouth the hard palate needs to be taken as well to decrease the chance of recurrence.
- Mohs' micrographic surgery: Some cancers that involve the lip may be removed by Mohs' surgery, also known as micrographic surgery. In this method, the tumor is removed in thin slices.
- Laryngectomy: If the tumor removal affects the ability to swallow then the larynx will need to be removed in order to connect the windpipe to a hole in the neck for breathing.
- Neck dissection: A class of operations that are usually used to stage certain cancers in the head and neck. The neck dissections involve removing the lymph nodes on one or both sides of the neck through an incision in the neck. Cancers of the oral cavity and pharynx often spread to the lymph nodes in the neck.
- Pedicle or free flap reconstruction: This is the type of surgery that you could have to reconstruct the area where the tumor was removed. The size of the tumor determines how much reconstruction is needed and what muscles and skin would be used for the surgery.
- Tracheostomy: If the cancer is blocking the throat and is too large to remove completely, a hole (tracheostomy) may be placed in the neck to bypass the tumor and allow the patient to breathe more comfortably.
- Dental extraction and implants: If radiation treatment will be used, a dental evaluation is needed. Teeth may need to be pulled (dental extraction) and replaced with artificial teeth that are mounted on an artificial root placed in the jaw bone (implant).

Radiation therapy uses high-energy rays or particles to destroy cancer cells or slow their rate of growth. Radiation therapy can be used as main treatment for small cancers. Patients with larger cancers may need both surgery and radiation therapy.

- External radiation therapy: The most common way to give radiation to these cancers is to carefully focus a beam of radiation from a machine outside the body.
- Brachytherapy (internal radiation): Another method of giving radiation is to place metal rods that contain radioactive materials in or near the cancer. An implant is usually left in place for several days while the patient stays in the hospital in a private room. The implants are removed before the patient goes home.

Chemotherapy is the use of anticancer drugs that are given into a vein or taken by mouth. These drugs enter the bloodstream and can reach cancer that has spread to organs beyond the head and neck. These drugs may be used as single agents or in combination to have a stronger effect.

Chemotherapy is sometimes given to shrink the cancer before surgery or radiation treatment (neoadjuvant chemotherapy). In some cases it is then possible to use less radical surgery and reduce the volume of tissue being removed. Chemotherapy has also been used to relieve pain from cancers of the head and neck that are too large to be completely removed and which radiation treatment has not been able to control. Often chemotherapy is used together with radiation to shrink tumors that can't be removed with surgery.

Tumor growth factors and targeted therapy works with the cell growth factor receptors that can be found on oral cancer cells. Researchers have found that oral cancer cells have a greater amount of epidermal growth factor receptors that are more aggressive. The targeted therapy drugs are used to block the receptors thereby making the cells less likely to reproduce.

Two drugs used are cetuximab (Erbix) and erlotinib (Tarceva). Cetuximab is given intravenously and in combination with radiation. Erlotinib is given in pill form and it is still being studied. There is still an investigation on whether combining cetuximab with radiation is better than combining radiation with chemotherapy.

STATISTICS

Note: All information and data below refers to oral cancer as both the oral cavity (mouth) and the pharynx (throat) unless otherwise listed as individual areas.

How many people are diagnosed with oral cancer? How many people die from it?

- The American Cancer Society estimates that in 2007 there will be 34,360 new cases of oral & pharynx cancer in the United States (24,180 in men and 10,180 in women).
- The American Cancer Society also estimates that in 2007 there will be 7,550 deaths from oral & pharyngeal cancer in the United States (5,180 in men and 2,370 in women).
- The national five-year relative survival rates for 1996-2003 show that 58.3% of males survive five years after diagnosis and 63.4% of females survive five years after diagnosis of oral cancer.

- In Massachusetts between 2000 and 2004, the age-adjusted incidence rate of oral & pharyngeal cancer in men was 16.5 cases per 100,000 males and in women 6.6 cases per 100,000 females. Men are 2.5 times more likely to develop oral & pharyngeal cancer than women.
- The age-adjusted mortality rate of oral & pharyngeal cancers was higher in Massachusetts men (4.1 deaths per 100,000 males) than in Massachusetts women (1.6 deaths per 100,000 females) between 2000 and 2004. Men are 2.5 times more likely to die from oral & pharyngeal cancer than women.
- The age-adjusted incidence rate of oral & pharyngeal cancer for males is 3.1% higher in Massachusetts than nationally and for females is 8.2% higher in Massachusetts than nationally (based on data from the North American Association of Central Cancer Registries, 2000-2004).
- The age-adjusted mortality rate of oral & pharyngeal cancer for males is the same in Massachusetts as nationally and for females is 6.7% higher in Massachusetts than nationally (based on data from the North American Association of Central Cancer Registries, 2000-2004).

For additional statistics on oral cancer in Massachusetts, see Massachusetts Community Health Information Profile (MassCHIP) Instant Topics-Cancer: Oral Cavity and Pharynx. [<http://masschip.state.ma.us/InstantTopics/affiliate.htm>]. Please click on an affiliation then find oral cavity and pharynx cancer for the instant topics.

DPH PROGRAMS AND INFORMATION

Note: All information and data below refers to oral cancer as both the oral cavity (mouth) and the pharynx (throat) unless otherwise listed as individual areas.

DPH oral cancer programs

DPH, in partnership with the Boston University School of Dental Medicine, Harvard School of Dental Medicine, Tufts University School of Dental Medicine, Forsythe Institute, American Cancer Society, and Massachusetts Dental Society, has formed the Oral Cancer Partnership. It is currently involved in reducing the risk of oral cancer through the following educational materials and activities:

- educating the public about oral cancer through outreach and distribution of educational materials
- educating primary care providers involved with populations at high risk for oral cancer
- promoting tobacco cessation

Publications and Materials

Reports

The following reports can be accessed from the Massachusetts Cancer Registry website at

<http://www.mass.gov/dph/bhsre/mcr/canreg.htm>

- *Cancer Incidence and Mortality in Massachusetts-Statewide Report 2000-2004*
- *Cancer Incidence in Massachusetts-City and Town Supplement 2000-2004*

Pamphlets, Brochures and Videos

The following materials can be ordered by going to [Massachusetts Health Promotion Clearinghouse](http://www.maclearinghouse.com/) (<http://www.maclearinghouse.com/>).

- Brochure-Don't Be Afraid to Say Ahh...(for the public; available in English as a pdf file)

References

Adami, Hans-Olov, Hunter, David, and Trichopoulos, Dimitrios, eds. *Textbook of Cancer Epidemiology*. New York: Oxford University Press, 2002, pp. 115-136.

RELATED LINKS

Note: All information and data below refers to oral cancer as both the oral cavity (mouth) and the pharynx (throat) unless otherwise listed as individual areas.

Background/General Links

American Oral Cancer Foundation

[http:// www.aocf.org](http://www.aocf.org)

American Cancer Society (ACS)

- Cancer Reference Information: All About Oral Cavity and Oropharyngeal Cancer
http://www.cancer.org/docroot/CRI/CRI_2x.asp?sitearea=&dt=60

Centers for Disease Control and Prevention (CDC)

- National Center for Chronic Disease Prevention and Health Promotion : Oral Cancer
<http://www.cdc.gov/OralHealth/topics/cancer.htm>

National Cancer Institute (NCI)

- Head and Neck Cancer Home Page
<http://www.cancer.gov/cancertopics/types/head-and-neck/>
- What You Need To Know About the Cancer of the Larynx
<http://www.cancer.gov/cancertopics/wyntk/larynx>

Support for People with Oral and Head and Neck Cancer

<http://www.spohnc.org/>

The Oral Cancer Foundation

<http://www.oralcancerfoundation.org>

Prevention and Screening Links

American Oral Cancer Foundation: Prevention

<http://www.aocf.org/Prevention.htm>

National Cancer Institute (NCI)

- Oral Cancer (PDQ): Prevention
<http://www.cancer.gov/cancertopics/pdq/prevention/oral/patient>
- Oral Cancer (PDQ): Screening
<http://www.cancer.gov/cancertopics/pdq/screening/oral/patient>

Diagnosis and Treatment Links

American Cancer Society (ACS)

- NexProfiler Treatment Option Tool for Oral Cavity and Oropharynx Cancer
<https://www.cancer.nexcura.com/Secure/InterfaceSecure.asp?CB=275>

National Cancer Institute (NCI)

- Head and Neck Cancer: Treatment
<http://www.cancer.gov/cancertopics/treatment/head-and-neck>
- Clinical Trials
http://www.cancer.gov/clinical_trials/

The Oral Cancer Foundation

- Diagnosis
<http://www.oralcancerfoundation.org/diagnosis/>
- Treatment
<http://www.oralcancerfoundation.org/treatment/>

Statistics Links

American Cancer Society (ACS)

- Statistics
http://www.cancer.org/docroot/STT/stt_0.asp

Centers for Disease Control and Prevention (CDC) and National Program of Cancer Registries (NPCR)

- *United States Cancer Statistics: 2003 Incidence and Mortality*
<http://www.cdc.gov/cancer/npcr/uscs/index.htm>

National Cancer Institute (NCI)

- Surveillance, Epidemiology and End Results (SEER) Cancer Statistics Review, 1975-2003
http://seer.cancer.gov/csr/1975_2003/sections.html

North American Association of Central Cancer Registries (NAACCR)

- Statistics and Reports

http://www.naaccr.org/index.asp?Col_SectionKey=11&Col_ContentID=49